What is claimed is:

1. A method for diagnosing cancer in a subject comprising detecting or measuring an SGA-56M gene product in a sample derived from said subject, wherein the SGA-56M gene product is:

(a) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(b) a protein comprising SEQ ID NO:5;

(c) a protein comprising SEQ ID NO:6;

(d) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(e) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4 or a complement thereof as determined using an NBLAST algorithm, or a protein encoded thereby;

wherein detecting or measuring elevated levels of the SGA-56M gene product relative to a non-cancerous sample or a pre-determined standard value for a non-cancerous sample indicates the presence of cancer in the subject.

2. The method of claim 1, wherein the subject is a human.

3. The method of claim 1, wherein the cancer is breast or lung cancer.

4. The method of claim 1, wherein the sample is a tissue sample, a plurality of cells, or a bodily fluid.

5. The method of claim 1, wherein the SGA-56M gene product is a nucleic acid encoding SEQ ID NO:5 or SEQ ID NO:6.

6. The method of claim 1, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

7. The method of claim 1, wherein the SGA-56M gene product is an mRNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

8. The method of claim 1, wherein an antibody immunologically specific for an SGA-56M gene product is used for detecting or measuring the SGA-56M gene product.

9. The method of claim 8, wherein the antibody is immunologically specific for SEQ ID NO:5.

10. The method of claim 8, wherein the antibody is immunologically specific for SEQ ID NO:6.

11. The method of claim 1, wherein an oligonucleotide capable of binding specifically to the SGA-56M gene product is used for detecting or measuring the SGA-56M gene product.

12. The method of claim 11, wherein the oligonucleotide is DNA.

13. A method for staging cancer in a subject comprising detecting or measuring an SGA-56M gene product in a sample derived from the subject, wherein the SGA-56M gene product is:

(a) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(b) a protein comprising SEQ ID NO:5;

(c) a protein comprising SEQ ID NO:6;

(d) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(e) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

wherein detecting or measuring elevated levels of the SGA-56M gene product relative to a non-cancerous sample or a pre-determined standard value for a non-cancerous sample, indicates an advanced stage of cancer in the subject.

14. The method of claim 13, wherein the subject is a human.

15. The method of claim 13, wherein the cancer is breast or lung cancer.

16. The method of claim 13, wherein the cancer involves regional lymph nodes.

17. The method of claim 13, wherein the cancer involves distant metastases.

18. The method of claim 13, in which the sample is a tissue sample, a plurality of cells, or a bodily fluid.

19. The method of claim 13, wherein the SGA-56M gene product is a nucleic acid encoding SEQ ID NO:5 or SEQ ID NO:6.

20. The method of claim 13, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

21. The method of claim 13, wherein the SGA-56M gene product is an mRNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

22. The method of claim 13, wherein an antibody immunogically specific for an SGA-56M gene product is used for detecting or measuring the SGA-56M gene product.

23. The method of claim 22, wherein the antibody is immunologically specific for a protein comprising SEQ ID NO:5.

24. The method of claim 22, wherein the antibody is immunologically specific for a protein comprising SEQ ID NO:6.

25. The method of claim 13, wherein an oligonucleotide capable of binding specifically to the SGA-56M gene product is used for detecting or measuring the SGA-56M gene product.

26. The method of claim 25, wherein the oligonucleotide is DNA.

27. A method for treating a cancer in a subject, comprising administering to the subject a therapeutically effective amount of a compound capable of antagonizing expression and/or activity of an SGA-56M gene product, wherein said SGA-56M gene product is:

(a) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(b) a protein comprising SEQ ID NO:5;

(c) a protein comprising SEQ ID NO:6;

(d) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(e) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

wherein said administering reduces expression and/or activity of the SGA-56M gene product.

28. The method of claim 27, wherein the compound decreases expression of the SGA-56M gene product, wherein the SGA-56M gene product is a nucleic acid encoding SEQ ID NO:5 or SEQ ID NO:6.

29. The method of claim 27, wherein the compound decreases expression of the SGA-56M gene product, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

30. The method of claim 27, wherein the compound decreases expression of the SGA-56M gene product and wherein the SGA-56M gene product is an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

31. The method of claim 27, wherein the cancer is breast or lung cancer.

32. The method of claim 27, wherein the compound is a protein, peptide, or an organic molecule with a molecular weight of less than 500 daltons.

33. The method of claim 27, wherein the compound is an antisense oligonucleotide molecule capable of binding to said RNA, wherein binding inhibits translation of said RNA.

34. The method of claim 27, wherein the compound is a ribozyme molecule capable of targeting said RNA, wherein targeting inhibits translation of said RNA.

35. The method of claim 27, wherein the compound is an antibody immunogically specific for an SGA-56M gene product.

36. The method of claim 35, wherein the antibody is immunologically specific for a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

37. The method of claim 27, wherein the compound is a double stranded oligonucleotide capable of forming a triple helix with a promoter of an SGA-56M gene, wherein the SGA-56M gene is SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

38. The method of claim 27, wherein the compound is capable of modulating expression and/or activity of a specific binding partner of an SGA-56M molecule.

39. The method of claim 38, wherein said specific binding partner is a peptide, protein, or nucleic acid sequence.

40. The method of claim 38, wherein said SGA-56M molecule is selected from the group consisting of an SGA-56M protein or variant thereof or a nucleic acid sequence encoding an SGA-56M protein or variant thereof.

41. A method of vaccinating a subject against cancer comprising administering to the subject a molecule that elicits an immune response to an SGA-56M gene product, wherein the SGA-56M gene product is:

(a) an isolated RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(b) an isolated protein comprising SEQ ID NO:5;

(c) an isolated protein comprising SEQ ID NO:6;

(d) an isolated nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(e) an isolated nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

(f) an isolated DNA molecule comprising SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4; or

(g) an isolated nucleic acid molecule encoding SEQ ID NO:5 or SEQ ID NO:6;

wherein said immune response confers a protective immunity against said cancer to said subject.

42. The method of claim 41, wherein the subject is a human.

43. The method of claim 41, wherein the molecule is an isolated DNA molecule comprising SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

44. The method of claim 41, wherein the molecule is an isolated nucleic acid sequence encoding SEQ ID NO:5 or SEQ ID NO:6.

45. The method of claim 41, wherein the molecule is an isolated protein comprising SEQ ID NO:5 or SEQ ID NO:6.

46. The method of claim 41, wherein the cancer is breast or lung cancer.

47. The method of claim 41, wherein the immune response is a cellular or humoral immune response.

48. The method of claim 41, wherein the immune response comprises both a cellular and humoral immune response.

49. A method for determining risk of developing cancer in a subject, said method comprising:

(a) measuring an amount of an SGA-56M gene product in a sample derived from the subject, wherein said SGA-56M gene product is:

(i) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(ii) a protein comprising SEQ ID NO:5;

(iii) a protein comprising SEQ ID NO:6;

(iv) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

and

(b) comparing the amount of the SGA-56M gene product in the subject with the amount of SGA-56M gene product present in a non-cancerous sample or predetermined standard for a noncancerous sample, wherein an elevated amount of the SGA-56M gene product in the subject relative to the amount in the non-cancerous sample or predetermined standard for a noncancerous sample indicates a risk for developing cancer in the subject.

50. The method of claim 49, wherein the subject is a human.

51. The method of claim 49, wherein the cancer is breast or lung cancer.

52. The method of claim 49, wherein the SGA-56M gene product is a nucleic acid sequence encoding a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

53. The method of claim 49, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

54. The method of claim 49, wherein the SGA-56M gene product is an mRNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

55. The method of claim 49, wherein an antibody immunologically specific for the SGA-56M gene product is used to measure the amount of the SGA-56M gene product.

56. The method of claim 55, wherein the antibody binds to a protein comprising the amino acid sequence of SEQ ID NO:5 or SEQ ID NO:6.

57. The method of claim 49, wherein an oligonucleotide specific for the SGA-56M gene product is used to measure the amount of the SGA-56M gene product.

58. The method of claim 57, wherein the oligonucleotide is DNA.

59. A method for screening to identify a compound capable of binding to an SGA-56M molecule, said method comprising:

(a) contacting the SGA-56M molecule with a candidate agent, wherein said SGA-56M molecule is:

(i) an RNA corresponding to SEQ ID NO:1 SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(ii) a protein comprising SEQ ID NO:5;

(iii) a protein comprising SEQ ID NO:6;

(iv) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1,

1. SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

and

(b) determining if the candidate agent binds the SGA-56M molecule.

60. The method of claim 59, wherein said SGA-56M molecule is an RNA molecule corresponding to SEQ ID NO:1 or SEQ ID NO:3.

61. The method of claim 59, wherein said SGA-56M molecule is a DNA molecule, wherein said DNA molecule is at least 90% homologous to SEQ ID NO:1 or SEQ ID NO:3, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby.

62. The method of claim 59, wherein said SGA-56M molecule is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

63. The method of claim 59, wherein the screening is performed *in vitro*.

64. The method of claim 59,wherein the SGA-56M molecule is anchored to a solid phase.

65. The method of claim 59, wherein the candidate agent is anchored to a solid phase.

66. The method of claim 59, wherein the screening is performed in solution.

67. The method of claim 59, wherein said SGA-56M molecule is expressed on a surface of a cell or in a cytosol of a cell in step (a).

68. The method of claim 67, wherein the cell is engineered to express the SGA-56M molecule.

69. The method of claim 68, wherein the SGA-56M molecule is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

70. The method of claim 69, wherein the protein is expressed on a surface of the cell.

71. The method of claim 69, wherein the protein is expressed in a cytosol of the cell.

72. The method of claim 59, wherein the candidate agent is labeled radioactively or enzymatically.

73. A method for screening to identify a protein capable of interacting with an SGA-56M gene product, the method comprising:

(a) contacting the SGA-56M gene product to a plurality of polypeptides, wherein the SGA-56M gene product is:

(i) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(ii) a protein comprising SEQ ID NO:5;

(iii) a protein comprising SEQ ID NO:6;

(iv) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

(vi) a nucleic acid sequence encoding a protein comprising SEQ ID NO:5 or SEQ ID NO:6;

and

(b) determining if at least one protein binds to or forms a complex with the SGA-56M gene product.

74. The method of claim 73, wherein the contacting is performed *in vitro*.

75. The method of claim 73, wherein the contacting is performed in a cell.

76. The method of claim 75, wherein the method for screening is a two-hybrid screening method.

77. A method for screening to identify a protein capable of interacting with an SGA-56M gene product, the method comprising:

(a) immunoprecipitating the SGA-56M gene product from a cell lysate, wherein the SGA-56M gene product is:

(i) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(ii) a protein comprising SEQ ID NO:5;

(iii) a protein comprising SEQ ID NO:6;

(iv) a nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) a nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

(vi) a nucleic acid sequence encoding a protein comprising SEQ ID NO:5 or SEQ ID NO:6;

and

(b) determining if at least one protein binds to or forms a complex with the SGA-56M gene product in the immunoprecipitate.

78. A method for screening to identify a candidate agent capable of modulating an expression level of an SGA-56M gene, the method comprising:

(a) contacting the SGA-56M gene with a candidate agent, wherein the SGA-56M gene is a nucleic acid at least 90% homologous to SEQ ID NO:1 as determined using the NBLAST algorithm; and

(b) measuring the level of expression of an SGA-56M gene product, wherein the SGA-56M gene product is selected from the group consisting of an mRNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4, or a protein comprising SEQ ID NO:5 or SEQ ID NO:6, wherein an increase

or decrease in the level of expression relative to the level of expression in the absence of the candidate agent indicates that the candidate agent modulates expression of an SGA-56M gene.

79. The method of claim 78, wherein the SGA-56M gene product is an mRNA corresponding to SEQ ID NO:1 or SEQ ID NO:3.

80. The method of claim 78, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

81. An isolated polypeptide comprising SEQ ID NO:5 and variants and functional fragments thereof, wherein said variants and fragments exhibit an activity of SEQ ID NO:5.

82. An isolated polypeptide of claim 81, wherein said functional fragment or variant comprises an amino acid sequence of SEQ ID NO:6.

83. An isolated polypeptide encoded by a nucleic acid sequence which is at least 90% identical to a nucleic acid sequence of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.

84. An antibody immunologically specific for a polypeptide of claim 81.

85. An antibody immunologically specific for a polypeptide of claim 83.

86. An isolated nucleic sequence comprising SEQ ID NO:1 or SEQ ID NO:2 and variants and fragments thereof, wherein said variants and fragments exhibit an activity of SEQ ID NO:1 or SEQ ID NO:2.

87. An isolated nucleic acid sequence of claim 86, wherein said fragment or variant is a nucleic acid sequence comprising SEQ ID NO:3 or SEQ ID NO:4.

88. An isolated nucleic acid sequence of claim 86, wherein said variant or fragment is a nucleic acid sequence which is at least 90% identical to a nucleic acid sequence of SEQ ID NO:1 or SEQ ID NO:2.

89. An isolated nucleic acid sequence of claim 87, wherein said fragment or variant is a nucleic acid sequence which is at least 90% identical to a nucleic acid sequence of SEQ ID NO:3 or SEQ ID NO:4.

90. An isolated nucleic acid sequence, wherein said nucleic acid sequence encodes SEQ ID NO:5 or a fragment or variant thereof, wherein said fragment or variant exhibits an activity of SEQ ID NO:5.

91. An isolated nucleic acid sequence of claim 90, wherein said fragment or variant encodes an amino acid sequence comprising SEQ ID NO:6.

92. A host cell comprising a nucleic acid encoding a polypeptide of claim 81, wherein said nucleic acid sequence is operably linked to a promoter.

93. A host cell comprising a nucleic acid encoding a polypeptide of claim 82, wherein said nucleic acid sequence is operably linked to a promoter.

94. A method for producing a polypeptide, said method comprising culturing the host cell of claim 92 under conditions wherein the nucleic acid molecule is expressed.

95. A method for producing a polypeptide, said method comprising culturing the host cell of claim 93 under conditions wherein the nucleic acid molecule is expressed.

96. A composition comprising a nucleic acid sequence of claim 86 and a pharmaceutically acceptable carrier.

97. A composition comprising a nucleic acid sequence encoding an amino acid sequence comprising SEQ ID NO:5.

98. A composition comprising a nucleic acid sequence of claim 87 and a pharmaceutically acceptable carrier.

99. A composition comprising a nucleic acid sequence encoding an amino acid sequence comprising SEQ ID NO:6.

100. An immunogenic composition comprising:

(a) an isolated SGA-56M gene product in an amount effective to elicit an immune response, wherein said gene product is:

(i) an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4;

(ii) an isolated protein comprising SEQ ID NO:5;

(iii) an isolated protein comprising SEQ ID NO:6;

(iv) an isolated nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) an isolated nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

and

(b) a pharmaceutically acceptable carrier.

101. The immunogenic composition of claim 100, wherein the SGA-56M gene product is a nucleic acid at least 90% homologous to SEQ ID NO:1 as determined using an NBLAST algorithm.

102. The immunogenic composition of claim 100, wherein the SGA-56M gene product is a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

103. A pharmaceutical composition comprising an antibody of claim 84 and a pharmaceutically acceptable carrier.

104. A pharmaceutical composition comprising an antibody of claim 85 and a pharmaceutically acceptable carrier.

105. A pharmaceutical composition of claim 103, wherein the pharmaceutical composition is formulated for delivery as an aerosol, parenterally, or orally.

106. A pharmaceutical composition of claim 104, wherein the pharmaceutical composition is formulated for delivery as an aerosol, parenterally, or orally.

107. A pharmaceutical composition comprising:

(a) an isolated SGA-56M gene product, wherein said gene product is:

(i) an isolated RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4;

(ii) an isolated protein comprising SEQ ID NO:5;

(iii) an isolated protein comprising SEQ ID NO:6;

(iv) an isolated nucleic acid comprising a sequence hybridizable to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, under conditions of high stringency, or a protein comprising a sequence encoded by said hybridizable sequence;

(v) an isolated nucleic acid at least 90% homologous to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, or a complement thereof, as determined using an NBLAST algorithm, or a protein encoded thereby;

(vi) an isolated nucleic acid sequence encoding an amino acid sequence comprising SEQ ID NO:5 or SEQ ID NO:6;

and

(b) a pharmaceutically acceptable carrier.

108. A pharmaceutical composition of claim 107, wherein the composition is formulated for delivery as an aerosol, parenterally, or orally.

109. A method for diagnosing a cancer in a subject comprising:

(a) administering to the subject a compound that binds specifically to SEQ ID NO:5 and fragments and variants thereof, wherein the compound is bound to an imaging agent; and

(b) obtaining an internal image of the subject by visualizing the compound bound to the imaging agent;

wherein the detection of the compound bound to the imaging agent provides a positive indicator for diagnosing a cancer in the subject.

110. The method of claim 109, wherein a fragment or variant of SGA-56M is SEQ ID NO:6.

111. The method of claim 109, wherein the compound is an antibody immunologically specific for an SGA-56M molecule.

112. The method of claim 111, wherein the antibody is conjugated to a radioactive metal and said obtaining step comprises recording a scintographic image of decay of the radioactive metal.

113. A transgenic non-human animal, which expresses an RNA corresponding to SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, or a protein comprising SEQ ID NO:5 or SEQ ID NO:6.

114. A method for testing the effects of a candidate therapeutic compound comprising administering said compound to the transgenic non-human animal of claim 113, and determining any effects of the compound upon the transgenic non-human animal.

115. A kit comprising:

(a) in one or more containers, an oligonucleotide primer pair, wherein each primer is complementary to a different strand of a double-stranded nucleic acid comprising SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4, wherein said primer pair is capable of priming a DNA amplification reaction; and

(b) in a separate container, a reference DNA comprising a purified double-stranded nucleic acid comprising SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, or SEQ ID NO:4.